#include <ESP8266WiFi.h>

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

#define soilPin A0 // GPIO pin for soil moisture sensor

#define motorPin 13

#define LCD\_COLS 16

#define LCD\_ROWS 4

LiquidCrystal\_I2C lcd(0x27, LCD\_COLS, LCD\_ROWS);

void setup() {

  Serial.begin(115200);

  lcd.init();

  lcd.backlight();

  lcd.setCursor(0, 0);

  lcd.print("Initializing...");

  pinMode(soilPin, INPUT); // Configure soil moisture sensor pin as input

  pinMode(motorPin, OUTPUT); // Configure soil moisture sensor pin as input

}

void loop() {

  // Read soil moisture level

  int moistureValue = analogRead(soilPin);

  int moisturePercentage = map(moistureValue, 0, 1023, 0, 10000); // Multiply by 100

  moisturePercentage = moisturePercentage / 100.0; // Convert to float and divide by 100

  // Display sensor readings on LCD

  lcd.clear();

  lcd.setCursor(0, 0);

  lcd.print("Soil Moisture:");

  lcd.print(moisturePercentage);

  lcd.print("%");

  // Check soil moisture level and trigger pump motor if necessary

  Serial.println(moisturePercentage);

  if (moisturePercentage < 30) { // Adjust threshold as needed

    // Trigger pump motor (add your code here)

    digitalWrite(motorPin,HIGH);

    Serial.println("Soil moisture is low, triggering pump motor...");

    // Example: digitalWrite(pumpPin, HIGH);

  }else{

     digitalWrite(motorPin,LOW);

  }

  delay(1000); // Delay before the next iteration

}